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Concrete action being taken for the promotion of new and renewable sources of energy, including the implementation of the World Solar Programme 1996-2005

Report of the Secretary-General

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I. Introduction

1. The General Assembly, in its resolution 53/7 of 16 October 1998, endorsed the World Solar Programme 1996-2005 as a contribution to the overall sustainable development agenda and, in its resolutions 54/215 of 22 December 1999 and 55/205 of 20 December 2000, called for further action to ensure that the Programme was fully integrated into and brought into the mainstream of the efforts of the United Nations system towards attaining the objective of sustainable development. In the latter resolution, the Assembly reiterated that mutually supportive efforts at the national and international levels are imperative in the pursuit of sustainable development, which includes, inter alia, the provision of financial resources and the transfer of technology for the application of cost-effective energy and the wider use of environment-friendly, renewable sources of energy.

2. Taking note with appreciation of the report of the Secretary-General on concrete action being taken for the promotion of new and renewable sources of energy, including the implementation of the World Solar Programme 1996-2005 (A/55/91) and action to promote the mobilization of resources, the General Assembly invited the international community to support, as appropriate, including by providing financial resources, the efforts of developing countries to move towards sustainable patterns of energy production and consumption. It again called upon all relevant funding institutions and bilateral and multilateral donors, as well as regional funding institutions and non-governmental organizations, to support, as appropriate, the efforts being made for the development of the renewable energy sector in developing countries on the basis of environment-friendly, renewable sources of energy of demonstrated viability, while taking fully into account the development structure of energy-based economies of developing countries, and to assist in the attainment of the levels of investment necessary to expand energy supplies beyond urban areas.

3. In expressing its appreciation of the continued efforts of the Secretary-General in bringing the World Solar Programme 1996-2005 to the attention of relevant sources of funding and financial assistance, the General Assembly encouraged the Secretary-General to continue his efforts to promote the mobilization of adequate technical assistance and funding and to enhance the effectiveness and the full utilization of existing international funds for the effective implementation of national and regional high-priority projects in the area of renewable sources of energy. The Assembly also recognized that the wider use of available renewable energy technologies requires the diffusion of available technologies on a global scale, including through North-South and South-South cooperation.

4. The General Assembly requested the Secretary-General, in consultation with the United Nations Educational, Scientific and Cultural Organization (UNESCO) and in cooperation with the United Nations Development Programme (UNDP), the Global Environment Facility (GEF), the United Nations Environment Programme (UNEP) and other relevant organizations, to submit to it, at its fifty-sixth session, a report on concrete action being taken for the promotion of new and renewable sources of energy, including the effective implementation of, and mobilization of resources for, the World Solar Programme 1996-2005. The present report has been prepared pursuant to that request.

II. Background

5. Concerns over pollution from energy use have been growing as recognition of the problem by the scientific community has increased, and the scientific basis for decision-making with regard to anthropogenic greenhouse gas emissions has improved. The third assessment report of the Intergovernmental Panel on Climate Change (IPCC) entitled *Climate Change 2001: The Scientific Basis*, states that there is now stronger evidence of human influence on climate than at the time of the second assessment report (1995), and it is likely that increasing atmospheric concentrations of greenhouse gases from human activities have contributed substantially to the global warming observed over the past 50 years (see E/CN.17/2001/2).

6. Moreover, IPCC has revised its earlier estimates of the temperature increase from 1-3.6 degrees Centigrade to 1.5-6 degrees Centigrade. Thus, the increases in atmospheric concentration of carbon dioxide (CO_2) and several other greenhouse gases continue to give cause for widespread concern. In particular, the IPCC report notes that the atmospheric concentration of CO_2 has now risen to over 360 parts

per million from the pre-industrial level of about 270 parts per million.

7. There are also concerns about localized pollutants emanating from fossil fuel use, including sulphur and nitrogen oxides, carbon monoxide and suspended particulate matter. Variously, these gases contribute to depletion of the stratospheric ozone layer and acid precipitation, as well as to increased incidents of ill health and death. The need to mitigate and, where possible, prevent these impacts from fossil fuel use is increasingly recognized.

8. Nearly 2 billion people currently lack access to modern energy services and most of them live in rural areas where non-commercial energy sources, such as biomass, firewood and charcoal, are used, mainly for cooking. Effective demand for energy in the rural areas of many developing countries is constrained by low income levels and low population densities. Connection to the national electricity grid is often difficult and prohibitively expensive. Under such conditions, it may be advantageous to consider energy from renewable sources.

9. Growing environmental and social concerns, on the part of both decision makers and the general public, have brought a new dimension to the perception of the potentially significant contribution renewable energy can make to the energy mix in the long term. The World Solar Programme 1996-2005 is an instrument at the service of the international community for the promotion and enhanced utilization of environment-friendly, renewable sources of energy.[1]

III. Relation to the Programme for the Further Implementation of Agenda 21

10. Renewable energy was included in the deliberations of the ninth session of the Commission on Sustainable Development, held in New York from 16 to 27 April 2001, and was highlighted as a means of making energy systems more supportive of sustainable development objectives. In particular, the Commission recommended that Governments develop energy services, particularly in rural areas, through, inter alia, where appropriate, the development of renewable energy sources, support for increased use of renewable energies both in grid-connected and decentralized systems, development of appropriate policies and programmes to increase the contribution of renewable energies to total energy consumption, and promotion of the utilization of renewable natural resources such as solar, wind, biomass, geothermal, hydro, including mini-hydro, and ocean to meet part of the energy needs for sustainable development. It further recommended the development and implementation of measures to make renewable energy technologies more affordable and strengthening financial support to developing countries for the promotion of renewable energy.

11. In addressing rural energy needs, the Commission on Sustainable Development recommended that Governments promote a sustainable use of biomass and, as appropriate, other renewable energies, support local groups and non-governmental organizations (NGOs) in the promotion and delivery of newly developed environmentally sound technologies, including solar cooker technology, promote capacity-building in local societies and remove barriers to the implementation of policies for renewable energy development in rural areas, and promote rural community participation, including local Agenda 21 groups, with the support of the international community in developing and utilizing renewable energy technologies to meet their daily energy needs.

12. At its second session, held in New York from 14 to 25 August 2000, and as part of its input to deliberations on energy for the ninth session of the Commission on Sustainable Development, the Committee on Natural Resources and Energy for Development recommended the introduction of national and regional policies and programmes to create an enabling environment for the development and utilization of renewable energy sources and to speed up the use of these sources and cover all sectors of the economy. It recommended the expansion of research and development activities, expansion of the role of the private sector in disseminating renewable energy technologies, and implementation of regulatory frameworks as well as greater focus on education and training, and greater emphasis on South-South cooperation in the field of renewable energy utilization. The Committee further recommended the use of the World Solar Programme 1996-2005 as a vehicle to boost the development and implementation of solar energy technologies and its full implementation.

13. In its resolution 55/205, the General Assembly encouraged the Ad Hoc Inter-Agency Task Force on Energy to coordinate the contributions of all relevant

organizations of the United Nations system at the ten-year review of progress achieved in the implementation of the outcome of the United Nations Conference on Environment and Development, the World Summit on Sustainable Development, to be held in Johannesburg, South Africa, in September 2002.

IV. International coordination and cooperation

14. In its resolution 55/205, the General Assembly also encouraged the Ad Hoc Inter-Agency Task Force on Energy to continue its efforts to ensure that the work of the World Solar Programme 1996-2005 is fully integrated into the mainstream of the efforts of the United Nations system to achieve the objectives of sustainable development. Since its inception, the coordination of activities in general has included those under the purview of the World Solar Programme 1996-2005. The World Solar Programme 1996-2005 was considered specifically at the fifth session of the task force when a representative of UNESCO presented a briefing on the status of the World Solar Programme 1996-2005 and the task force had an opportunity to discuss individual projects and explore how best to contribute to the programme. The matrix of activities was developed by the task force as a tool to facilitate cooperation and coordination of the work of the United Nations in the field of energy, including the World Solar Programme 1996-2005. The matrix is an evolving document that is updated and elaborated upon periodically by task force members and is in the public domain at http://www.un.org/esa/sustdev/iaenrma.htm.

15. The UNESCO Programme in 2000-2001 contained provisions for activities contributing to the implementation of the World Solar Programme 1996-2005, and the Director-General was authorized therein to undertake concrete action to ensure that the World Solar Programme 1996-2005 becomes a joint endeavour of the entire United Nations system. At its one hundred sixty-first session, in June 2001, the Executive Board of UNESCO was expected to approve proposals of the Director-General to include activities in favour of the use of new and renewable energies, including the World Solar Programme 1996-2005 in both the UNESCO medium-term strategy 2002-2007 and programme and budget 2002-2003. The UNESCO General Conference is also to consider these proposals in the autumn of 2001.

16. UNESCO continues to pursue a twofold strategy which permits encouragement of discussions on investment opportunities for renewable energy and energy efficiency projects, as well as the stimulation of advocacy and mobilizing functions, and the promotion of training, education and information efforts in the field of renewable energy.

17. UNESCO continues the implementation and the promotion of the Global Renewable Energy Education and Training Programme (GREET), with special attention to Africa, and furthers the International Renewable Energy Information and Communication System. Within the GREET Programme, activities are aimed mainly at the improvement of the use, maintenance and management of solar energy projects and programmes and the transfer of technological know-how. University, continuing and distance education on renewable energy use and applications were improved through education and training activities targeting such professionals in the field as decision and policy makers, researchers, engineers, university teachers and technicians. In addition, with a view to promoting further specialized learning materials on renewable energy, UNESCO has launched the publication of a "Renewable Energy Science and Engineering Series".

18. For the African chapter of the GREET Programme, a new conceptual training solar platform has been designed and implemented at the Scientific, Industrial Research and Development Centre in Zimbabwe. This platform constitutes an adapted training tool and simulator for the dissemination of knowledge about renewable energy for decentralized rural electrification, and will be used to conduct week-long seminars and training programmes at the national and subregional levels. The first training-of-trainers course using platform facilities was organized for the Southern African Development Community in Harare, Zimbabwe, from 2 to 7 April 2001.

19. In another effort to improving the capacity of Member States in this field through training on the use and maintenance of renewable energy technologies and equipment, UNESCO organized the Second Summer School for English-Speaking Africa on "Solar energy for rural electrification" for 33 renewable energy experts and professionals of the Southern African Development Community countries in Harare, Zimbabwe, from 16 to 27 October 2000. This effort is supported by teaching manuals produced by UNESCO

on the use and maintenance of photovoltaic (PV) systems for water pumping and on the use and maintenance of biogas systems, which will also be distributed more widely.

20. UNESCO also supported a training course for solar home systems in Lombok, Indonesia from 22 to 24 November 2000 in cooperation with the Indonesian Agency for the Assessment and Application of Technology, within the framework of a project on "Multichannel Learning for Empowering Women Farmers using Renewable Energy".

21. Efforts continue to be made by UNESCO, in association with multilateral partners and national specialized institutions, to promote wider use of renewable energy and to enhance bilateral and regional cooperation through the co-organization of regional business and investment forums for renewable energy sources. Three forums targeting Asia and the Pacific (Kuala Lumpur, Malaysia, 4-7 September 2000), the Arab region (Muscat, Oman, 12-15 November 2000), and the Mediterranean region (Marrakech, Morocco, 14-17 May 2001) were successfully implemented. These events helped to promote financing opportunities for projects using efficient renewable energy technologies and for sustainable development and therefore constitute a concrete initiative to assist Member States in mobilizing resources and identifying financial opportunities by facilitating contacts and interaction among decision and policy makers, local authorities, investors, financing institutions, industrialists, electricity utilities, managers, researchers and professionals in the field of renewable energy.

22. Further efforts have also been made to promote the establishment of an African solar council and the promotion of renewable energy in Africa through the active participation of UNESCO in the "Promotion of Renewable Energies in Africa", an event held in Niamey, Niger, from 22 to 25 January 2001. At that event, the following major topics were discussed: (a) education and training on renewable energy, (b) decentralized rural electrification and environmental protection and (c) renewable energy for development. Among the documents prepared by UNESCO for the meeting, the "World Solar Programme 1996-2005: Africa — mechanisms of implementation (an outline)" was furnished to national authorities in Africa.

23. A planned evaluation of the contribution of UNESCO to the World Solar Programme 1996-2005 will provide an opportunity for UNESCO to update its programme in renewable energy and align it with emerging priorities.

24. The Department of Economic and Social Affairs has undertaken a number of concrete initiatives to assist countries in the development and utilization of renewable energy. With combined funding from GEF and the Governments of Australia, China and the Netherlands, a project in China to remove barriers to the rapid commercialization of renewable energy is currently under way. Key activities include technical assistance and capacity-building to create a policy framework that promotes renewable energy development, provides incentives and new mechanisms for financing and credit arrangements, and promotes innovative business models with the participation of entrepreneurs, NGOs and community-based organizations. As part of its market-oriented approach, the project has established and is strengthening the China Renewable Energy Industry Association, is compiling a portfolio of bankable renewable energy projects within an Investment Opportunity Facility, and is creating a geographic information system for solar and wind resource data. Finally, the project is demonstrating some renewable energy applications with which China has had little experience to date, such as hybrid solar-wind systems, and advanced biomass and biogas technologies.

25. Under a trust fund established by the Government of Italy, assistance is also provided by the Department of Economic and Social Affairs to small island developing States for projects to promote solar lighting in homes, schools and community centres and for such solar-operated equipment as radios, televisions and medical refrigerators. Projects have been recently completed in Mauritius, the Federated States of Micronesia, Seychelles, St. Lucia and Solomon Islands, and others are under implementation in Fiji, Marshall Islands and Papua New Guinea. Recently, a trust fund was established in the Department of Economic and Social Affairs by the Government of the Netherlands to provide assistance for the African Development Bank to build capacity within the Bank to support renewable energy programmes of Member States in Africa. In addition, the Syrian Arab Republic is being provided with assistance on the creation of a master plan for the development and application of renewable energy

technologies. In the Arab States, a UNDP-funded regional project focusing on building local capacity for undertaking renewable energy programmes has been successfully completed. Specific attention was given to decentralized rural applications, entrepreneur development, and standards and best practices. The project paved the way for better exchange of information among the participating countries on renewable energy developments and prospects, as well as on expertise available within and outside the region. Projects on biomass for rural economies and on rural energy commercialization for income generation and productive applications are under implementation in India. In addition, several new projects on renewable energy have also been approved by the United Nations Foundation for implementation by the Department of Economic and Social Affairs in China and India.

26. GEF, through its three implementing agencies (the World Bank, UNDP and UNEP), has provided significant levels of financing for renewable energy projects in developing countries. In its first decade (1991-2000), GEF approved $570 million in grants for 48 renewable energy projects in 47 countries with developing and transitional economies. Total funds mobilized for these projects have exceeded $3 billion, because GEF grants have also leveraged significant financing and other resources from Governments, other donor agencies, regional development banks, implementing agencies, and the private sector. These renewable energy projects fall into two categories: those aimed at removing barriers to markets for commercial or near-commercial technologies, and those for reducing long-term technology costs through research, demonstration and commercialization. GEF seeks to involve and support the private sector and promote commercial and sustainable markets for a variety of renewable applications, with the overarching goal of developing sustainable private markets to expand the use of renewable energy in developing countries and maximize the social, economic and environmental benefits this can bring. GEF renewable energy projects involve private firms as manufacturers and dealers, local project developers, financial intermediaries, recipients of technical assistance, technology suppliers and contractors, and project executors. Private project developers, for example, receive financing and technical assistance, while also benefiting from improved regulatory frameworks.

27. Examples of GEF-financed projects include: support to private solar home systems dealers in Bangladesh, China, India, Indonesia, Sri Lanka, Viet Nam and Zimbabwe; wind power and small hydropower developers in China, India and Sri Lanka; bagasse power developers in Mauritius; and solar hot water heating manufacturers and installers in Tunisia. Domestic technology development grants have featured in some projects, notably for wind turbine and solar PV module manufacturers in China. Some projects, including one in Sri Lanka, facilitate innovative microfinancing approaches through local organizations that increase affordability and expand local markets. The GEF has recently begun to consider long-term project approaches, such as a new 10-year project in Uganda to remove market barriers to private sector development for approximately 70 megawatts of biomass, hydro, and solar energy systems. The project will build on a newly enacted private power law through comprehensive capacity-building, institution strengthening, and the introduction of regulatory approaches to facilitating environmentally sustainable private sector delivery mechanisms.

28. Working with a wide range of partners, UNEP helps develop and implement approaches for analysing various energy policies, climate change mitigation options, energy sector reform, industrial energy efficiency and the environmental implications of transport choices. Its efforts are primarily directed at developing countries, and much of its work is done jointly with energy-environment-development institutes located in countries throughout the world. The UNEP Collaborating Centre on Energy and Environment is an international group of scientists, engineers, and economists that provides technical and analytical support for UNEP and partners in developing countries. Specific projects and activities on renewable energy include the African Rural Energy Enterprise Development Initiative, which engages the private sector to deliver affordable energy services based on clean and renewable energy technologies in five African countries. The project has different components that focus, respectively, on enterprise development, NGO capacity-building, financing institution training, and policy reform in Governments.

29. The Renewable Energy Technology/Energy Efficiency Investment Advisory Facility of UNEP helps financial institutions evaluate potential renewable energy technology or energy efficiency investments in

countries with developing and transitional economies. UNEP is also working to strengthen the capability of Pacific island nations to plan and manage the integration of wind generation into their electricity sectors. The main activities include the development of courses on wind power at the University of the South Pacific, the installation of an experimental turbine, staff training, and the preparation of a wind energy development plan. UNEP has helped Natural Resources Canada enhance the usefulness of a pre-feasibility analysis software for renewable energy projects by adding a greenhouse gas worksheet that allows analysts to calculate the emissions avoided by a renewable energy technology investment, and by enhancing the international features of the tool.

30. UNEP has produced a number of publications on renewable energy technologies and has launched a pilot initiative, the Sustainable Energy Advisory Facility, to provide information and technical support for sustainable energy activities in selected developing countries, with a focus on policy changes to establish a framework for sustainable energy approaches. Many of the advisory services to Governments focus on renewable energy. Partly in response to the decisions of the ninth session of the Commission on Sustainable Development, UNEP is expanding this pilot effort, using an approach that links into a network leading energy-environment policy centres in developing and developed countries.

31. The United Nations Industrial Development Organization (UNIDO) promotes the development of renewable energy technologies, including biomass, solar, wind, hydro and marine energy. In Africa, UNIDO promotes the use of biomass for industrial energy and supports local manufacture for the equipment needed for biomass conversion and use. UNIDO also encourages the development of the manufacturing sector devoted to renewable energy, such as the wind turbine industry in Egypt. To stimulate investment in renewable energy technologies, UNIDO disseminates information on the application of solar, wind and sustainable biomass energy technologies. A specialized Centre for the Application of Solar Energy has been established in Australia to provide rapid and cost-effective support and advice on solar energy technologies and market advice for entrepreneurs seeking to invest in solar and other renewable energy industries.

32. The Food and Agriculture Organization of the United Nations (FAO) has implemented renewable energy projects aimed at increasing the supply of biofuels, reducing woodfuel consumption and increasing energy efficiency (using improved stoves and charcoal-making techniques), promoting renewable energy applications to enhance agricultural productivity and for rural energy services such as electricity, improving market and trade mechanisms, fostering gender equality, addressing health problems, and promoting biomass energy for combined heat and power. It has conducted such energy planning and training activities at the regional and national levels as the Regional Wood-Energy Development Programme for Asia.

33. Extensive programmes that promote the development and use of renewable sources of energy are also being implemented by several of the United Nations regional commissions, including the Economic Commission for Latin America and the Caribbean (ECLAC), the Economic and Social Commission for Asia and the Pacific (ESCAP) and the Economic and Social Commission for Western Asia (ESCWA). For example, in ESCAP, efforts are continuing to promote greater awareness of renewable energy technologies and their potential, and to enhance capacity-building through the organization of seminars and workshops to share experiences and know-how. One such event is a regional seminar on commercialization of biomass technologies for their enhanced utilization in Guangzhou, China, from 4 to 8 June 2001. In addition, ESCAP is undertaking a technical assistance project to promote commercialization of renewable energy technologies in the Asian region.

V. Obstacles and constraints impeding the promotion of new and renewable sources of energy and options for action to overcome them

34. Although the actions described in chapter IV above are significant, it is obvious that much more needs to be done to promote new and renewable sources of energy, including the implementation of the World Solar Programme 1996-2005. Therefore, an analysis of the obstacles and constraints impeding the development and utilization of new and renewable

sources of energy can be helpful in understanding possible options for action. Preparations for the discussion on energy issues at the ninth session of the Commission on Sustainable Development provided an opportunity to undertake the following analysis of this issue.

35. Although energy from new and renewable sources in its modern forms, excluding large hydropower, currently plays a relatively minor role in the global energy system, its progressively increasing role is considered crucial if the objectives of energy for sustainable development are to be achieved. Since the time of the United Nations Conference on New and Renewable Sources of Energy, held in Nairobi in 1981, nearly all countries have been attempting to adopt strategies for promoting new and renewable sources of energy, in diverse ways and under distinct sets of constraints. With availability characteristics specific to each new and renewable energy source, diffusion of the technologies for harnessing each source faces distinct barriers and constraints. Policy options and strategies for increasing the scale application of new and renewable energy sources must take account of the diversity of national circumstances, as well as of technology options.

36. The main challenge lies in the development and utilization of new and renewable energy technologies on a scale wide enough to impact on the energy situation nationally and globally. Despite progress in promoting renewable energy applications, numerous constraints and barriers continue, although some have been lowered in recent years. Actions initiated both by Governments and international agencies to remove them over the past two decades have not been commensurate with the scale of effort needed to mainstream energy from new and renewable sources into the energy sector.

37. Challenges confronting new and renewable energy development and utilization include the following:

(a) Low priority given to new and renewable energy development in national energy planning and policy development;

(b) Uneven playing field due to subsidies for conventional energy systems (including direct and indirect fuel subsidies);

(c) Lack of commensurate institutional arrangements;

(d) Lack of awareness of technologies, as well as their economic and social benefits;

(e) Inadequate support for technology development;

(f) Market uncertainties and constraints regarding access to technologies;

(g) Non-uniform and discouraging levels of import duties and other levies;

(h) High upfront cost of renewable energy systems;

(i) High transaction costs of smaller-scale projects;

(j) Lack of financing and credit arrangements;

(k) Inadequate development of standards and best practices for all new and renewable energy systems;

(l) Lack of manufacturing infrastructure;

(m) Paucity of skilled human resources.

38. The creation of an enabling policy environment, with appropriate institutional arrangements at the national level, would accelerate the development and wider scale application of new and renewable sources of energy. The experience of some countries that have established separate ministries, government departments or agencies dedicated exclusively to renewable energy indicates that such action has invariably spurred a variety of policy initiatives and catalysed nationwide activities. An institutional focal point at the national level, with its counterparts at decentralized levels, enables a country to evolve a coherent and coordinated approach with the involvement of relevant entities in the public and private sectors, and with NGOs.

39. Available policies include the following:

(a) Linking new and renewable energy policies to sustainable development policies and to actions consistent with international agreements;

(b) An enabling environment;

(c) Legal and regulatory policies and frameworks for attracting investment;

(d) Providing a clear policy message to mobilize all key actors and catalyse them into action.

40. Technology dissemination options include the following:

(a) Market-oriented approaches for the diffusion of mature solar, wind, biomass and other new and renewable energy technologies;

(b) Enhancing funding for research, development and demonstration;

(c) Investing in the creation of national centres of excellence in new and renewable energy, which in turn can lead to strengthening local capacity;

(d) Establishing networks at the subregional, regional and international levels in order to attract international support and to foster international cooperation, including South-South cooperation;

(e) Facilitating joint research programmes and cost-shared research;

(f) Facilitating the process of learning from the experience of industrialized nations in establishing closer links between research and development and industry and in establishing international cooperation agreements and partnerships.

41. Other institutional arrangements include the following:

(a) Establishing national institutions in the public and private sectors for the implementation of policy and regulation;

(b) Supporting decentralized institutions that can provide the necessary interfaces for programme promotion and serve a catalytic role by providing public information and encouraging participatory approaches involving NGOs and community-based organizations;

(c) Facilitating institutional networks for research, development and demonstration.

42. The introduction of innovative financing and credit schemes, including concessional loans to users as well as to manufacturers, is an option that can provide the needed impetus for the expansion of new and renewable energy applications. Innovative financing options have emerged in recent years aimed at overcoming the barriers faced in attempting to commercialize new and renewable energy technologies.

VI. Conclusion

43. Concrete action being taken for the promotion of new and renewable sources of energy, including the implementation of the World Solar Programme 1996-2005, represent progress at the international level and by individual Governments as part of the global effort to achieve the objectives of sustainable development in the area of energy. However, an analysis of the obstacles and constraints indicates that there is much more that can and needs to be done at the national, regional and international levels, and suggests many options that can be considered to overcome them.

44. In preparation for the World Summit on Sustainable Development in 2002, the Ad Hoc Inter-Agency Task Force on Energy is continuing efforts to enhance cooperation on programmes, projects and activities that promote the full integration of the World Solar Programme 1996-2005 in the mainstream of efforts of the United Nations system to achieve sustainable development. The task force was able to coordinate the contributions of all relevant organizations of the United Nations system to the consideration of the theme of energy by the Commission on Sustainable Development at its ninth session and is making efforts to achieve the same success at the World Summit on Sustainable Development.

Notes

[1] The term "solar" is used herein in a generic sense and refers to all forms of renewable energy, including the solar thermal, solar photovoltaic, biomass, wind, mini-hydro, tidal, ocean and geothermal forms.